



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.9811
Job Sheet 165143



Part No: 646.9811

Job Qty: 18 ea

Part Name: Upper Deflector



Part Weight: 0 lbs

Job Created: 9/30/17

Due Date: 10/31/17

Type: Stock

Status: Scheduled

Job Tracking No:

Created By: Mario Poulin

Description:

Note: DWG REV A SHEET 4 IPP REV:A NEW ISSUE 12/09/10 JFS VERIFY BY DD

Ship Via:

Bill of Materials

Part/Part Name

Part Note

Serial No Quantity Location

646.9811

DWG REV A SHEET 4 IPP REV:A NEW ISSUE 12/09/10 JFS VERIFY BY DD

DD

0.000

Upper Deflector

M707516B5.000X0.375

7075-16 Bar 5.000" X

0.375"

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter / Supplier
				Setup hrs	Run Hrs	
90	Start up Operation	18 Ea	10/30/17	0.00	0.00	Start up container
140	Outsource	18 pcs	10/31/17	0.00	0.00	Outsource4
150	Packaging	18 pcs	10/31/17	0.00	0.00	Packaging2
155	QC	18 pcs	10/31/17	0.00	0.00	QC5
180	Packaging	18 pcs	10/31/17	0.00	0.00	Packaging3
190	QC21-SA	18 Ea	10/31/17	0.00	0.00	QC21

Part Op 140 - Issue P/O to ATG : 38248
Descriptions: 180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

3.1 mils thickness
NOV 10 2017
DAS

Job BOM

Part / Item	Component Name	Quantity	Operation	Special Comments
646.9811 B165143	324 Ea (18 ea)	90-Start up Operation		

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	646.9811 B165143	324	18	0	0

Part Specifications

Specifications could not be found.

Part: **646.9811 B165143**

Created: 9/30/17 10:40 AM DART.MICHAUD-FEBRILLE.VICTORIA



Serial No: **S000007**

Printed By: Goldston, Justin 10/2/17 10:44 AM

DART
AEROSPACE
S012049



Upper Deflector

PART NO: 646.9811
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 11/21/17
Job No: 165143

DART
AEROSPACE
S012212



Upper Deflector

PART NO: 646.9811
Revision:
Operation: Outsource
Change No:

Mfg Date: 11/21/17
Job No: 165143

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K64 1K7
CANADA
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www.dartaerospace.com

Work Order Summary

Thursday, September 28, 2017 2:05:42 PM

Page 1 of 2

Criteria : Work Order ID: 165143 Item ID: 646.9811 Product Family MACHINING
Work Order Start Dates 8/25/2017 to 8/25/2017 11:59:59 PM Work Order Required Dates 9/21/2017 to 9/21/2017 11:59:59 PM
All References
Work Order Status Released

Work Order ID	165143	Required Qty	18.0000	Status Code	Released
Item ID	646.9811	Accepted Qty	0.0000	Scrap Qty	0.0000
Item Name	Upper Deflector				
Current Acct Value	\$127.880				
Start Date	8/25/2017	Required Date	9/21/2017	Completed Date	
Standard	** Actual **		** Acct. Value **	** Variance **	** Variance % **
Direct Costs	Total	Each	Each	Each	Each
Material	\$199.938	\$0.000	\$25.608	\$25.608	100.00%
Labor	\$495.948	\$0.000	\$19.440	\$19.440	100.00%
Outplant	\$0.000	\$0.000	\$26.113	\$26.113	100.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$1,446.954	\$0.000	\$56.719	\$56.719	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$2,142.839	\$0.000	\$127.880	\$127.880	

Item ID/Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
M7075T6S.375X5.000					
7075-T6 Sheet .375" Thick Plate x 5" Wide	25.7684		8/23/2017	10.9200	\$199.938
Total Matl Amts:					\$199.938

Work Center HAAS 1

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
CAME03												
		8/24/2017										
110			0.00	0.00	0.57	0.57	1.00	\$0.000	\$10.763	\$31.402	\$0.000	\$42.165
110			7.43	7.43	0.00	0.00	1.00	\$139.663	\$0.000	\$407.475	\$0.000	\$547.139
		8/25/2017										
110			0.00	0.00	5.14	5.14	1.00	\$0.000	\$96.570	\$281.748	\$0.000	\$378.318
MATT01												
		9/22/2017										
110			0.00	0.00	2.44	2.44	1.00	\$0.000	\$45.887	\$133.878	\$0.000	\$179.765
110			7.00	7.00	0.00	0.00	1.00	\$131.589	\$0.000	\$383.917	\$0.000	\$515.506
		9/26/2017										
110			0.00	0.00	2.63	2.63	1.00	\$0.000	\$49.491	\$144.393	\$0.000	\$193.884
TURC02												
		8/23/2017										
110			1.17	1.17	0.00	0.00	1.00	\$21.985	\$0.000	\$64.142	\$0.000	\$86.126

Total:	15.60	15.60	10.78	10.78	7.00	\$293.237	\$202.711	\$1,446.954	\$0.000	\$1,942.902
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Work Order ID 165143

Thursday, August 17, 2017 10:41:43 AM

165143

Page 1

Item ID: 646.9811

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Upper Deflector

Start Date: 8/25/2017 Start Qty: 18.00

18

Cust Item ID:

Required Date: 9/21/2017 Req'd Qty: 18.00

18

Customer:

Reference:

Approvals:

Process Plan:

Date: AUG 17 2017

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

646.9800

A

100

0.00

100

BAND SAW

Bandsaw

Memo

0.81

Jeaspa Bandsaw

Cut Blank at 32.700"

*** ONE BLANK MAKES TWO PARTS***

110

1.65

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

5.40

HAAS CNC vertical machine #1

1-Machine per folio FB131

DWG REV: AFOLIO REV: AA

2- deburr and break all sharp edges

18 ϕ 5C 17/08/24
17/09/22
18 ϕ 5C 17/09/24
17-08-24
DAS
39
9-89
17/09/22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 165143

Thursday, August 17, 2017 10:41:43 AM

165143

Page 2

Item ID: 646.9811 **Accept** ***N900040100*** **Setup** **Start** ***NS1***
Revision ID: **Stop** ***NS2***
Item Name: Upper Deflector
Start Date: 8/25/2017 **Start Qty:** 18.00 ***18*** **Cust Item ID:**
Required Date: 9/21/2017 **Req'd Qty:** 18.00 ***18*** **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run** **Start** ***NR1***
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop** ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120						18	φ		5.2
QC	Memo	0.18							17/08/24
Quality Control									17-08-24
									DAS
									39
									9-89
									17/09/16
130	QC8- Inspect parts - second check	0.00							
130			B.P	17-09-27		18	φ		DAS
QC	Memo	0.36							08
Quality Control									9-89
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140									
Outsource4	Memo	3,240.00							
Outsource process - Anodize	Issue P/O to ATG : _____								
	1- Black Anodize as per Dwg 646.9800								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Comformity is required								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐ _____					

Work Order ID 165143

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165143

Page 3

Item ID: 646.9811**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** Upper Deflector**Start Date:** 8/25/2017 **Start Qty:** 18.00***18*****Cust Item ID:****Required Date:** 9/21/2017 **Req'd Qty:** 18.00***18*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start *NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop *NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.36							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.36							
Quality Control									
180	Identify as per dwg & Stock Location: _____	0.00							
180									
Packaging	Memo	0.18							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Work Order ID 165143

Thursday, August 17, 2017 10:41:43 AM

165143

Page 4

Item ID: 646.9811**Accept*****N900040100*****Setup Start *NS1*****Revision ID:****Stop *NS2*****Item Name:** Upper Deflector**Start Date:** 8/25/2017 **Start Qty:** 18.00 ***18*****Cust Item ID:****Required Date:** 9/21/2017 **Req'd Qty:** 18.00 ***18*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run Start *NR1*****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop *NR2*****Sequence ID/
Work Center ID****Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

1.80

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Picklist Print

Thursday, August 17, 2017 10:41:43 AM

Page 1

Work Order ID: 165143

165143

Parent Item: 646.9811

646.9811

Parent Item Name: Upper Deflector

Start Date: 8/25/2017

Required Date: 9/21/2017

Start Qty: 18.00

Required Qty: 18.00

Comments: IPP REV:A NEW ISSUE 12/09/10 JFS VERIFY BY DD IPP Rev.B
17.06.27 Change Mat. as per ECN17-574 DP verify DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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M7075T6S.375X5.000

Purchased

No

100

f

26.5550

1.36

25.76842

DAS

1

9-89

17-08-23

M7075T6S.375X5.000

**

7075-T6 Sheet .375" Thick Plate x 5" Wide

Location

Loc Qty

Loc Code

MAT005

26.555

m134829

3.291

m135320

1

m136103

0.875

m136303

0.917

m136965

0.698

m137561

2.777

m137781

0.147

→ m138086

16.85

10.92

→ 138563 → 14.9

smh 17/09/21

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : _____			
Misidentified ☐		Past Due ☐					

APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 03828

SHEET 1 OF 8

DWG NO. 646.9800

REV: NC

PREPARED BY: B. PETERS

DATE: 03/19/13

EFFECT ON DWG
☒ INC. ☐ UNINC.

DWG TITLE: DEFLECTOR

APPROVED BY:

ENGR

MFG

QC

EFF:

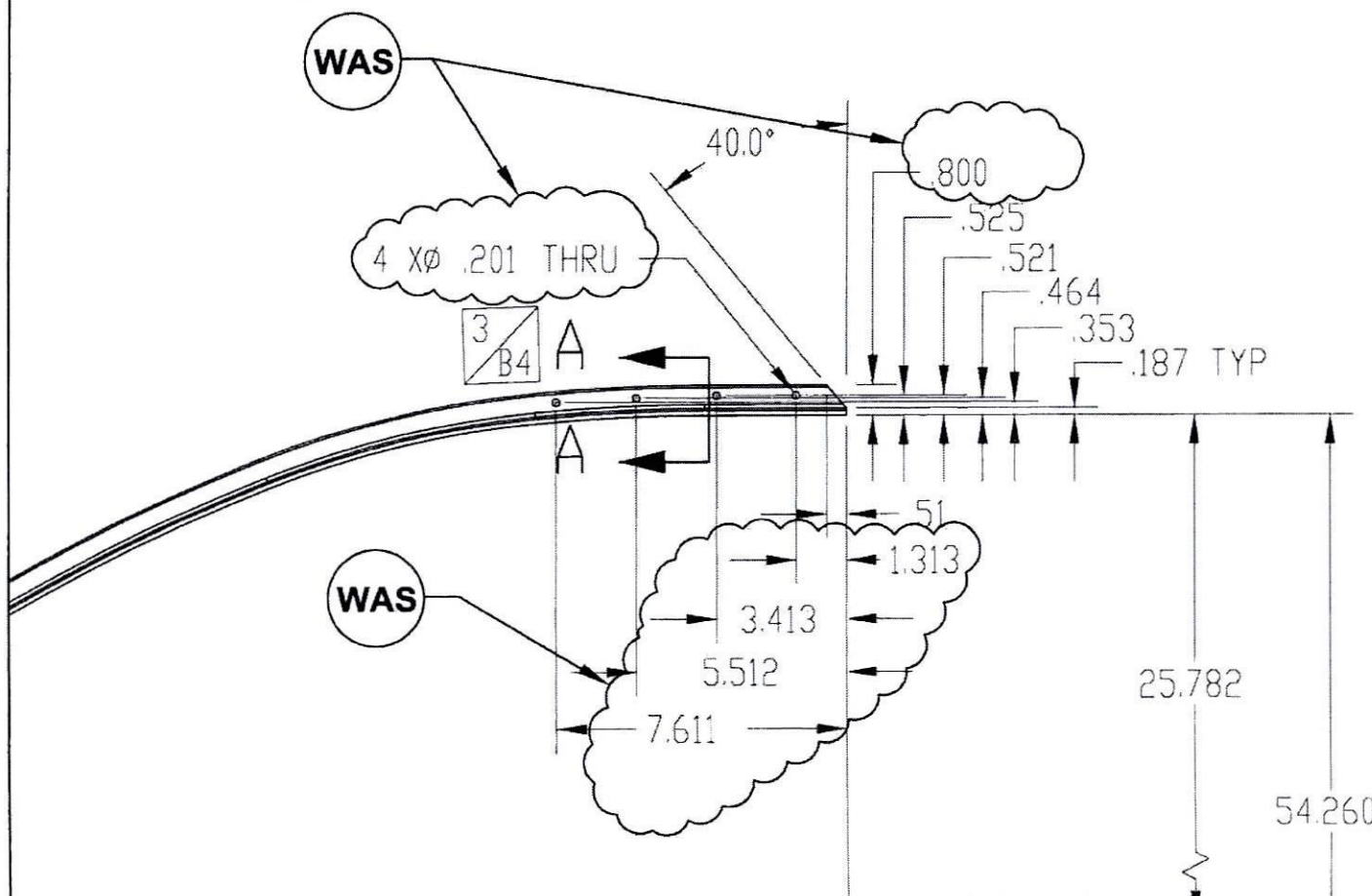
NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: REVISED CORNER RADIUS, TOLERANCES, AND ADDED INSPECTION DIMENSIONS.

ECR:

D-13-029

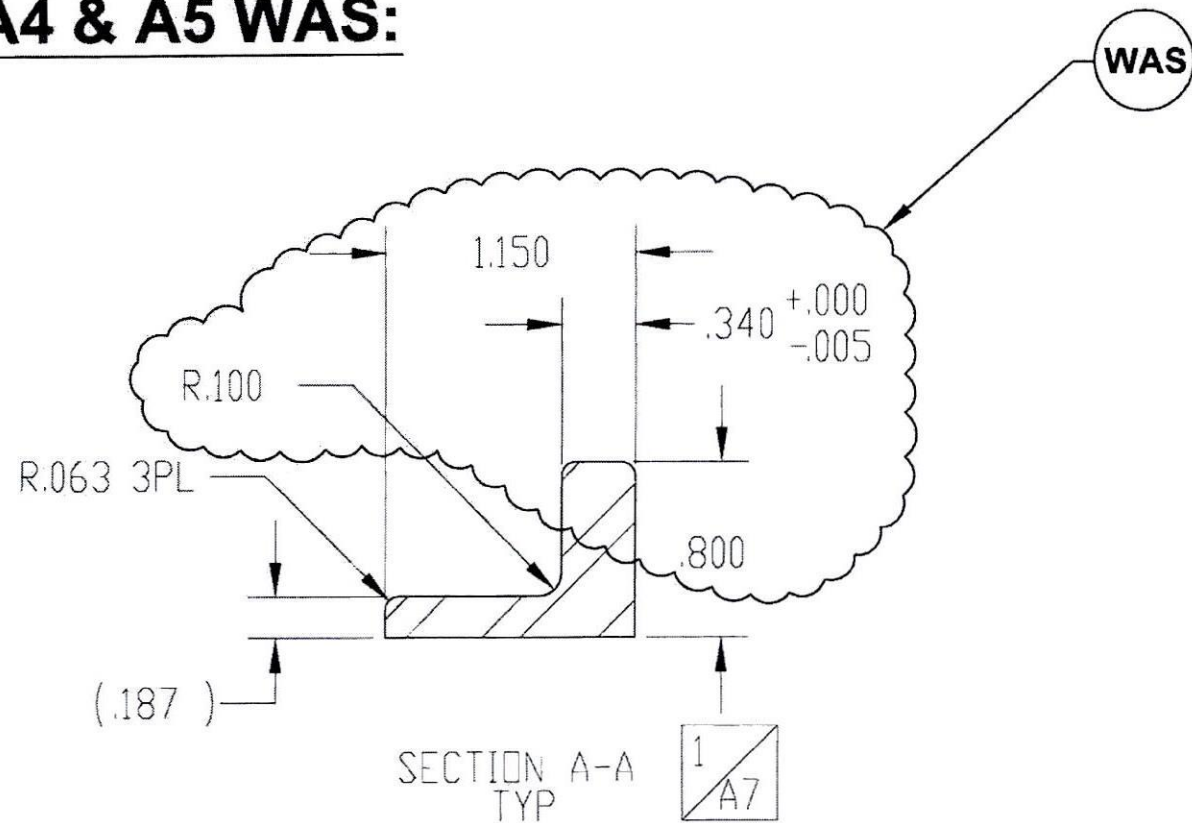
SHEET 1, ZONE A5-A6 & B5-B6 WAS:

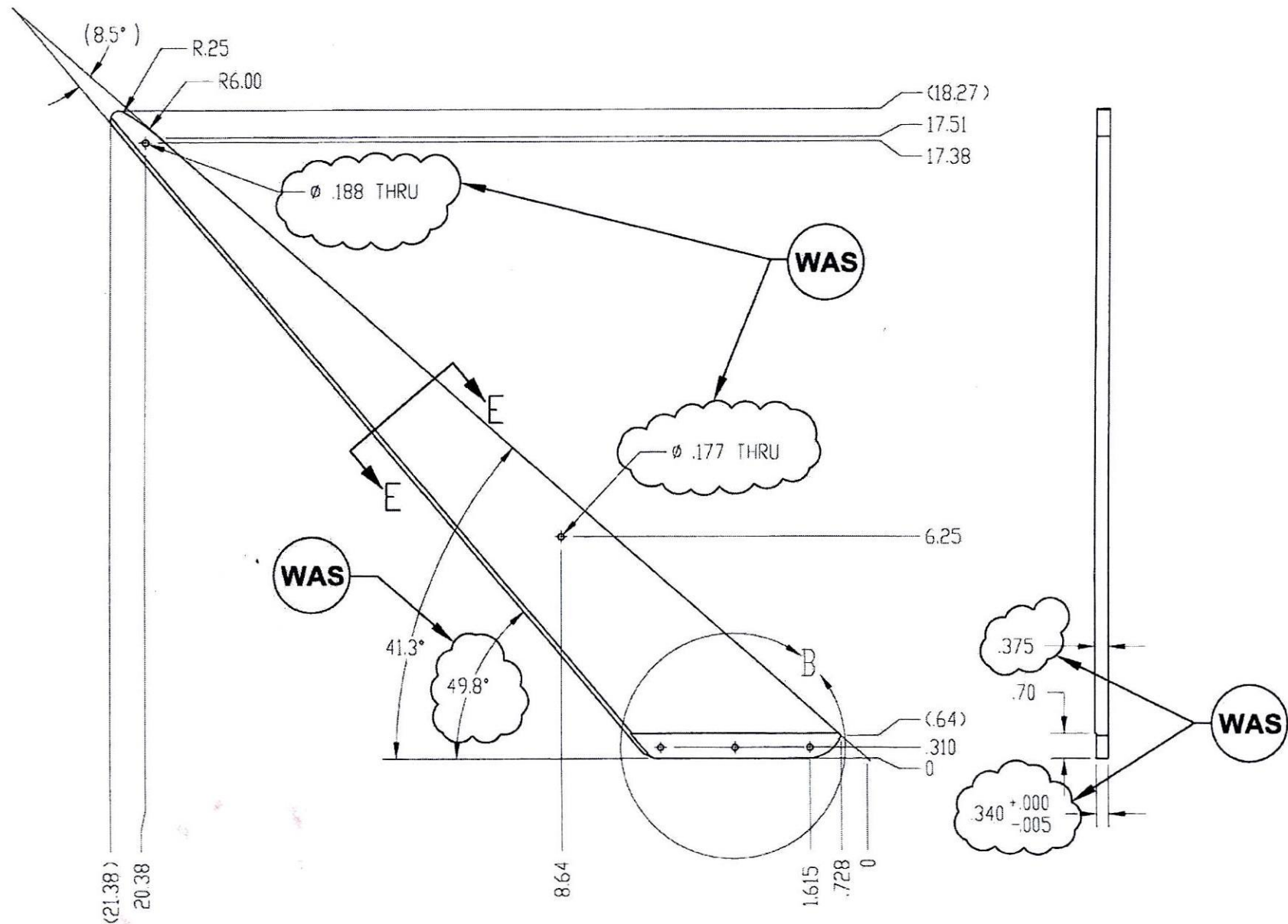
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 165143

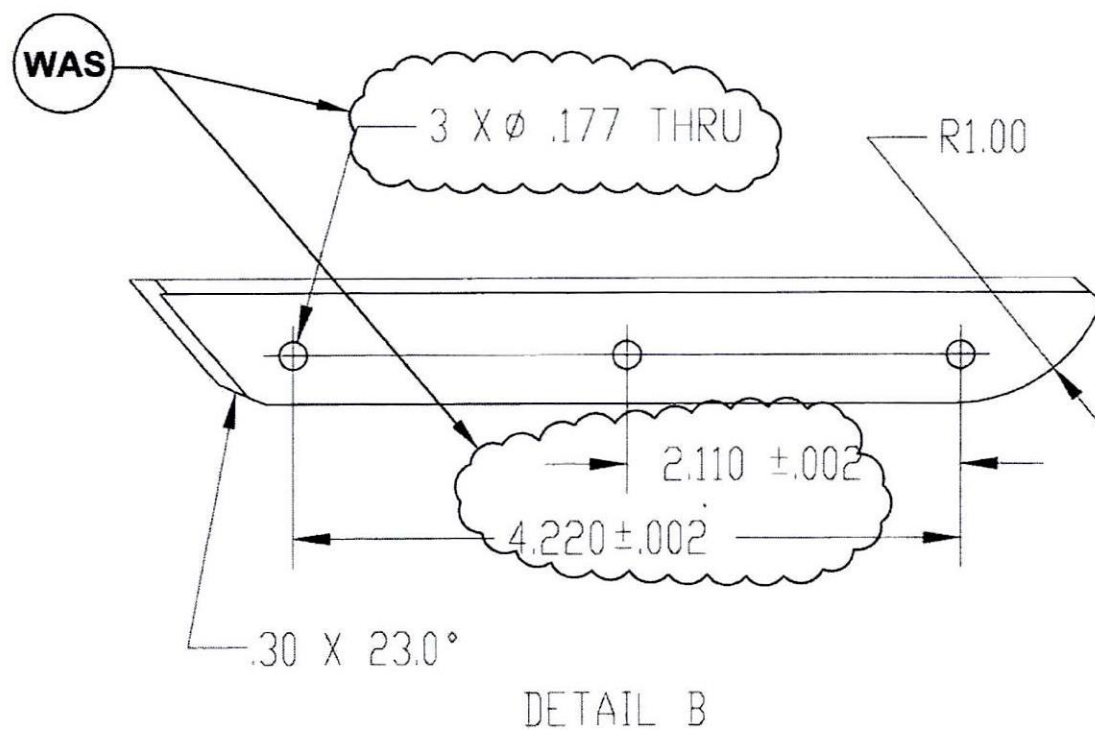
UM 17/8/16

DOCUMENTS EFFECTED:

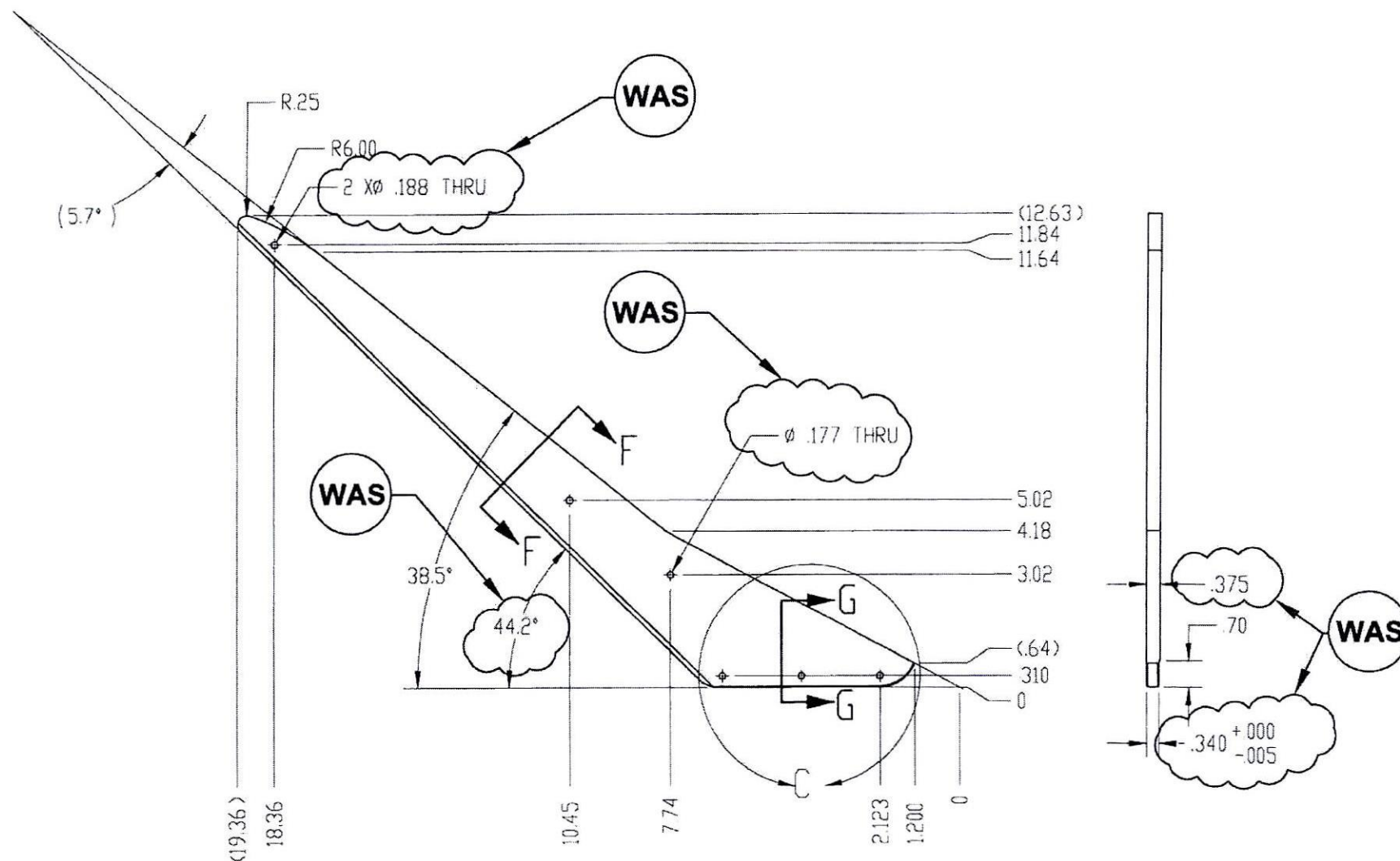
☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOMCHANGE CATEGORY
☐ MAJOR ☒ MINORDER REVIEW REQUIRED
☐ YES ☒ NO

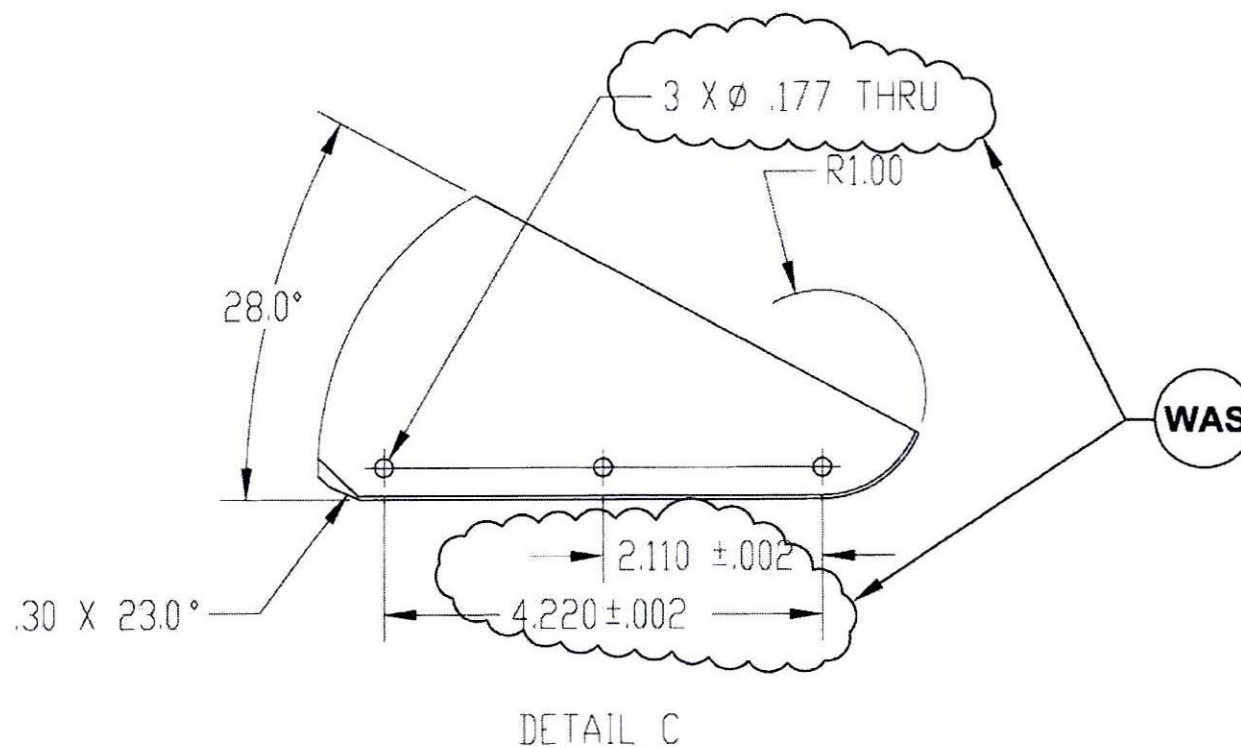
SHEET 3, ZONE A4 & A5 WAS:

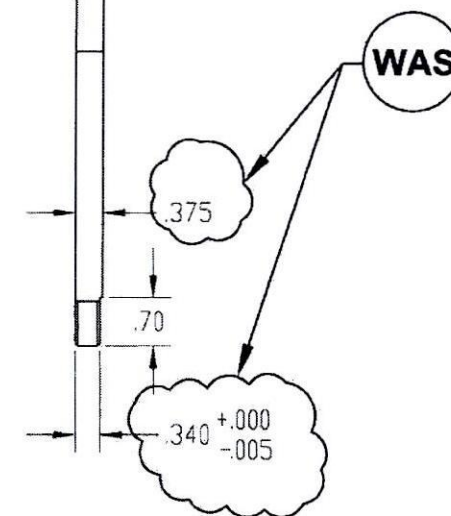
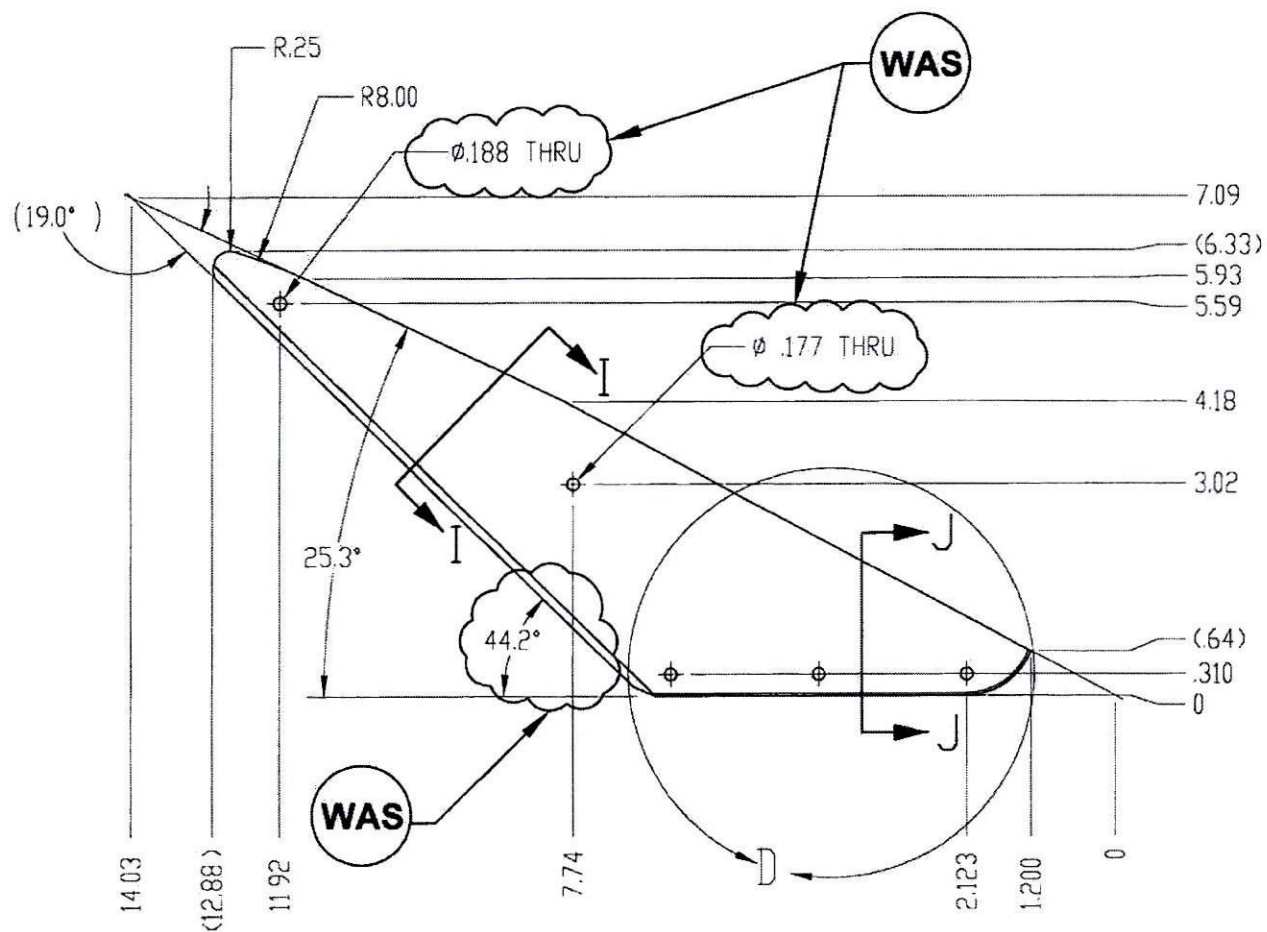
SHEET 4, WAS:

SHEET 4, ZONE C7 & C8 WAS:

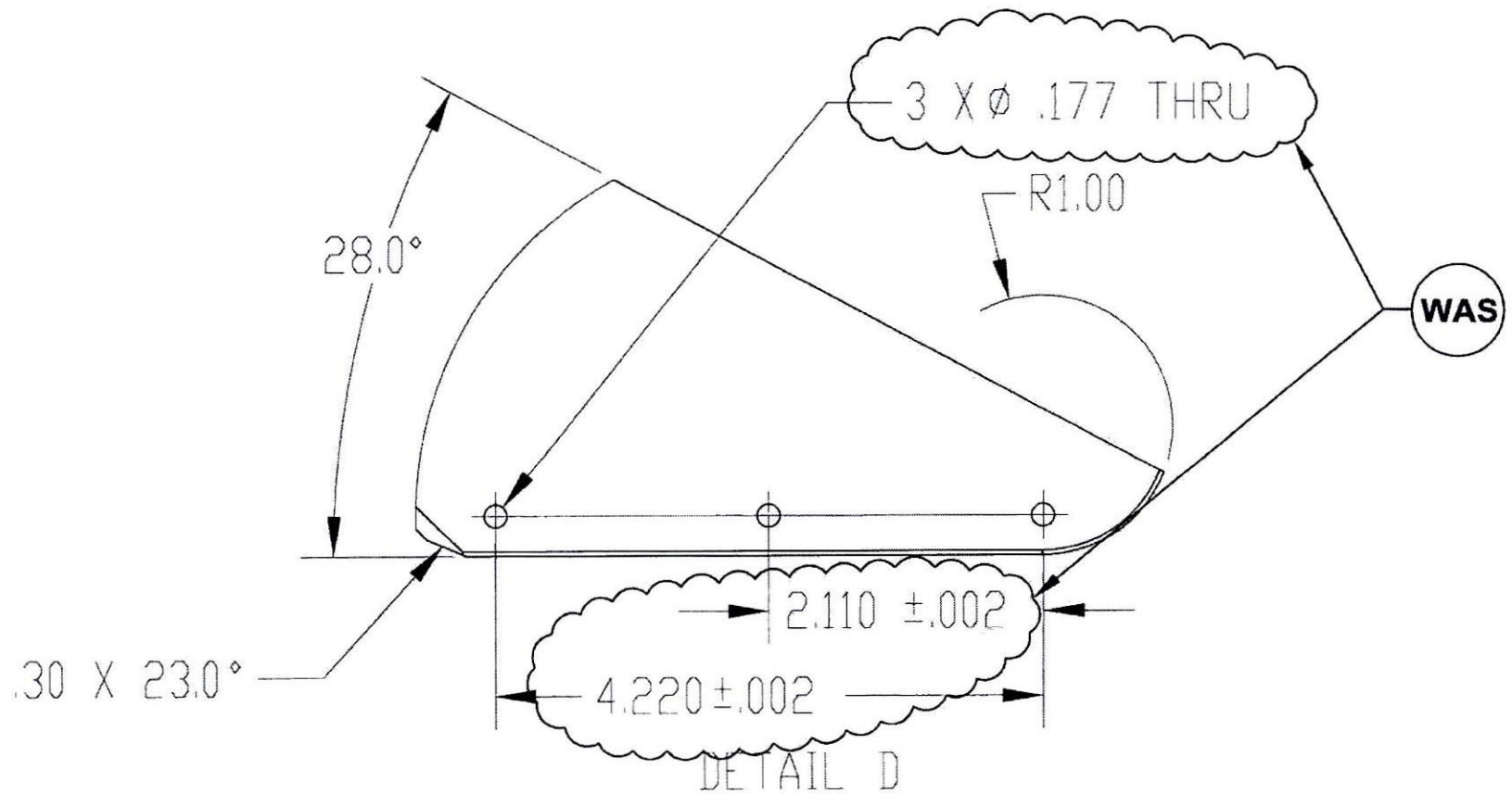
SHEET 5, WAS:



SHEET 5, ZONE C8, D7, & D8 WAS:

SHEET 6, WAS:

SHEET 6, ZONE C6 & D6 WAS:

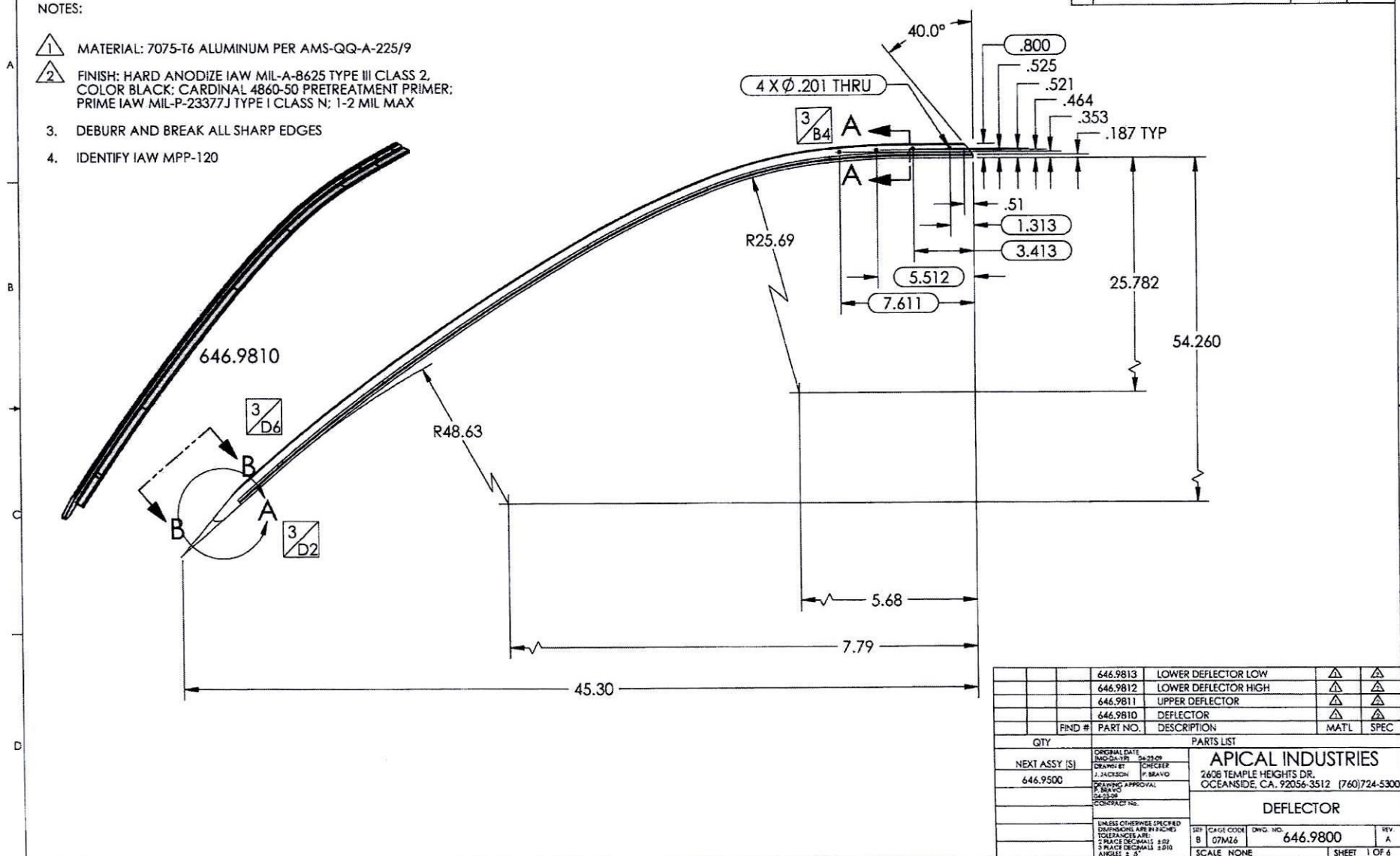


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NOTES:

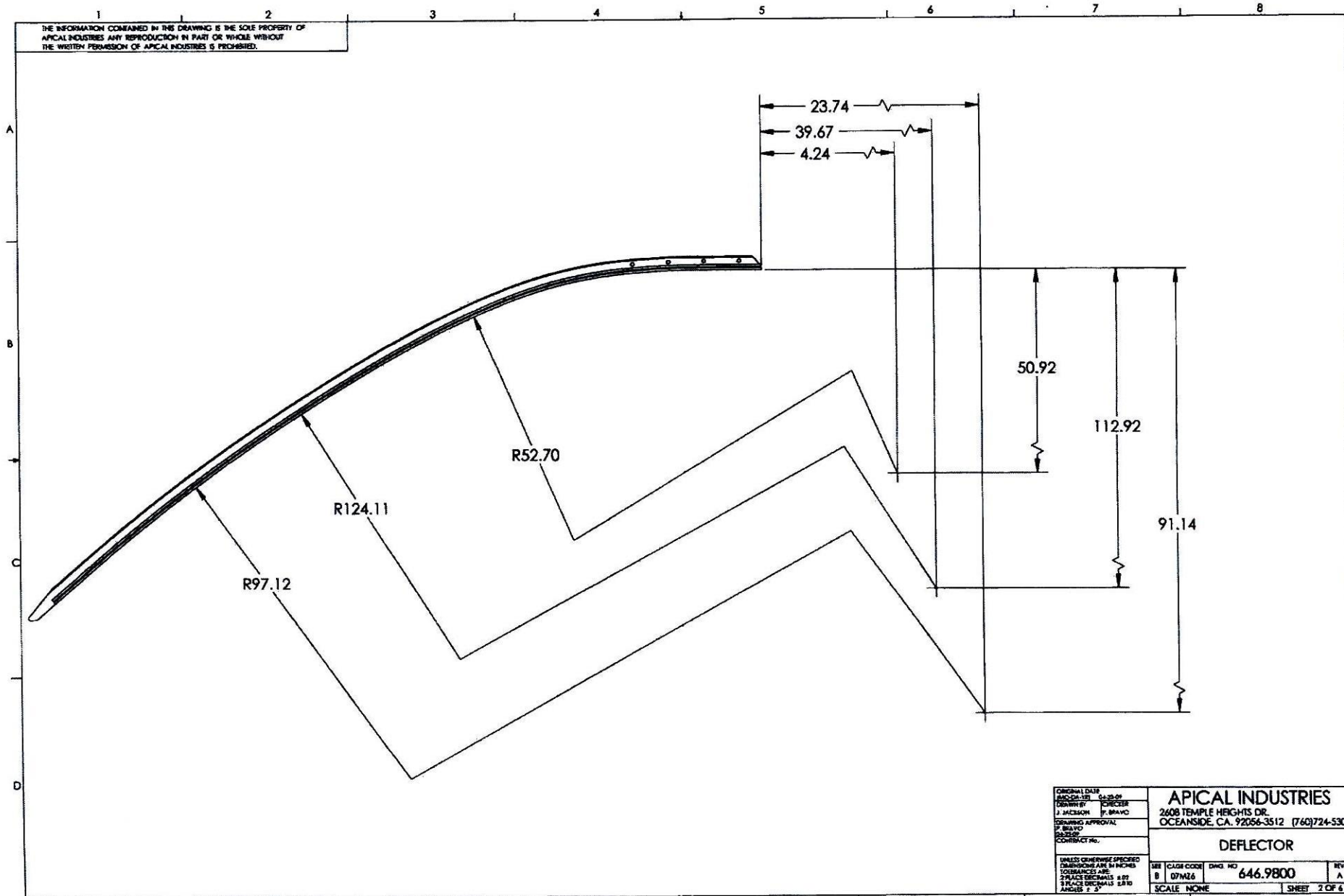
- 1 MATERIAL: 7075-T6 ALUMINUM PER AMS-QQ-A-225/9
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER; PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120

REV.	DESCRIPTION	DATE	APPROVED
N/C	INITIAL RELEASE	04/28/09	F. BRAVO
A	INCORPORATED ECH 030828	03/19/13	F. BRAVO



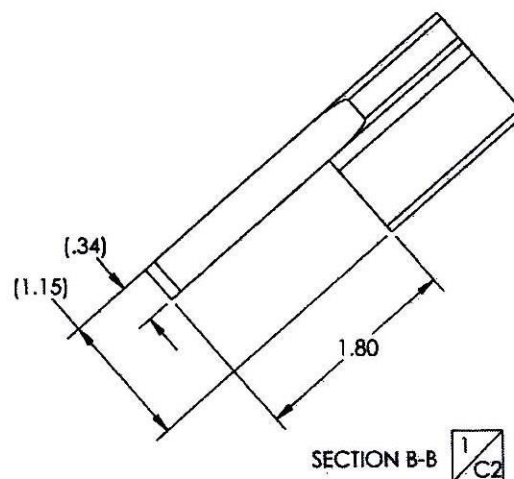
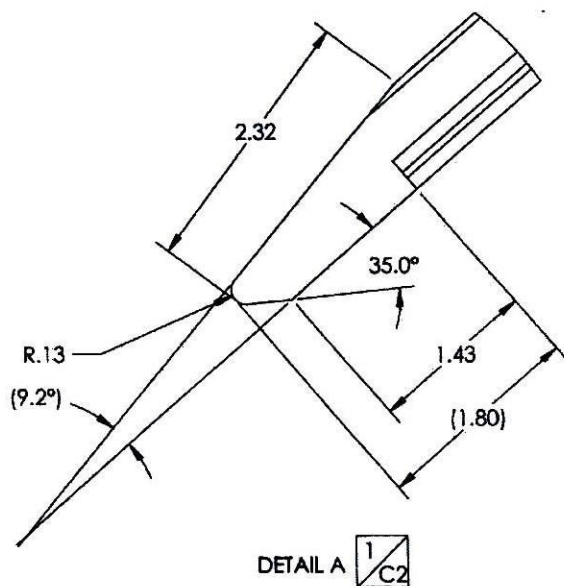
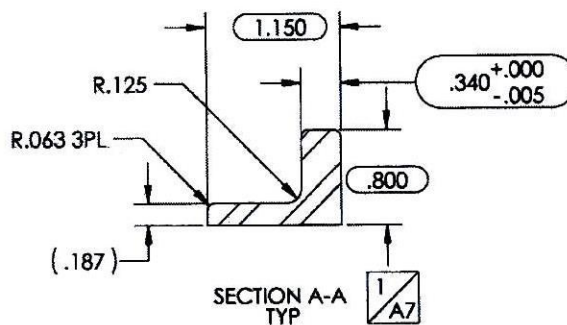
		646.9813	LOWER DEFLECTOR LOW	△	△
		646.9812	LOWER DEFLECTOR HIGH	△	△
		646.9811	UPPER DEFLECTOR	△	△
		646.9810	DEFLECTOR	△	△
	FIN#	PART NO.	DESCRIPTION	MATL	SPEC
QTY			PARTS LIST		
NEXT ASSY [S]			APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300 DEFLECTOR		
646.9500					
ORIGINAL DATE 04-28-09					
DRAWN BY J. JACKSON					
CHECKER F. BRAVO					
DESIGNING APPROVAL F. BRAVO			646.9800		
CONTRACT NO.					
UNLESS OTHERWISE SPECIFIED					
DIMENSIONS ARE IN INCHES					
TOLERANCES ARE:					
2 PLACE DECIMALS ±.02			REV. A		
3 PLACE DECIMALS ±.010			REV. A		
ANGLES ±.5°			REV. A		
SET			SCALE	DWG. NO.	REV.
B			07M26	646.9800	A
SCALE			NONE		
SHEET			1 OF 6		

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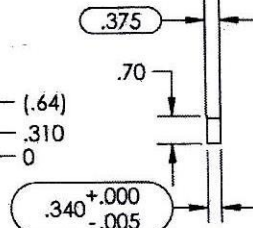
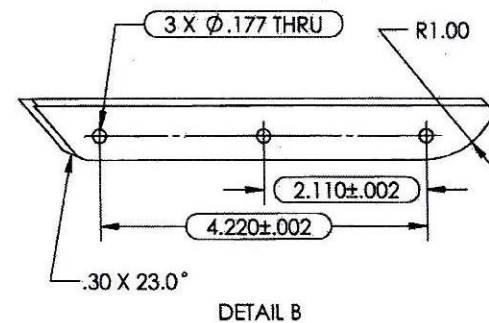
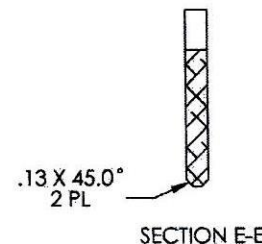
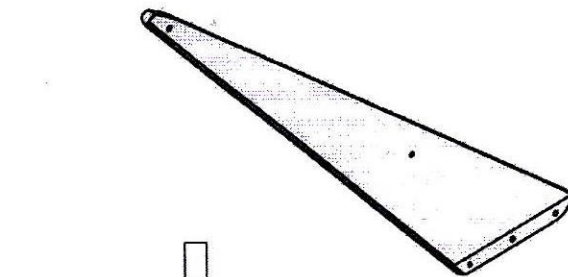
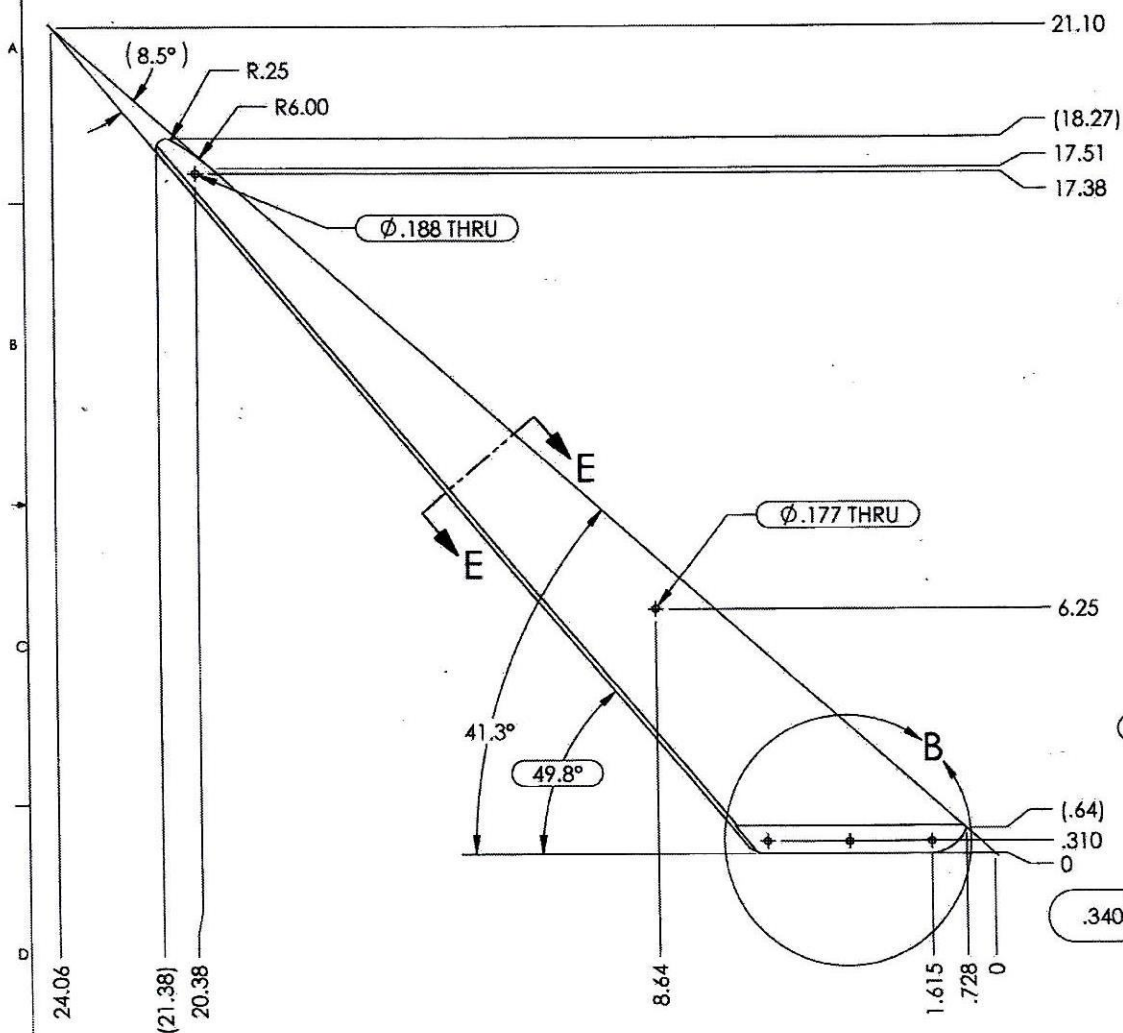
ORIGINAL DATE APPROVED BY DESIGNED BY DRAWING APPROVAL BY CONTRACT NO.		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACES DECIMALS ±.015 3 PLACES DECIMALS ±.005 ANGLES ±.5°		DEFLECTOR	
SEE CASE CODE B	07N26	DWG NO 646.9800	REV A
SCALE NONE		SHEET 2 OF 6	

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ORIGINAL DATE		APICAL INDUSTRIES	
DESIGNED BY		2608 TEMPLE HEIGHTS DR.	
DRAWN BY		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY		DEFLECTOR	
DRAWING APPROVAL		REV	
P. BRAVO		A	
CONTRACT NO.		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED		SHEET 3 OF 6	
DIMENSIONS ARE IN INCHES			
TOLERANCES ARE:			
2 PLACE DECIMALS .10			
3 PLACE DECIMALS .010			
ANGLES: 1°			

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ORIGINAL DATE 04-23-89		APICAL INDUSTRIES	
DRAWN BY J. JACKSON	CHECKED P. BRAVO	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL P. BRAVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CORRECTED NO.		DEFLECTOR	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		SER 07M26	REV A
2 PLACE DECIMALS ±.02		ENG. NO. 646.9800	
3 PLACE DECIMALS ±.010		SCALE NONE	SHEET 4 OF 6
ANGLES 2°			

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18.02

(5.7°)

R.25

R6.00

2 X ϕ .188 THRU

(12.63)

11.84

11.64

ϕ .177 THRU

5.02

4.18

3.02

(.64)

.310

0

$.340^{+.000}_{-.005}$

.375

.70

28.0°

.30 X 23.0°

4.220 $\pm$.002

2.110 $\pm$.002

R1.00

3 X ϕ .177 THRU

DETAIL C

646.9812

SECTION F-F

SECTION G-G

13 X 45.0°

2 PL

.04 X 45.0°

2 PL

DEFLECTOR

APICAL INDUSTRIES

2608 TEMPLE HEIGHTS DR.

OCEANSIDE, CA. 92056-3512 (760)724-5300

ORIGINAL DATE 04/23/09

DESIGNED BY J. JACKSON

CHECKED P. BRAYDO

DRAWING APPROVAL P. BRAYDO

CONTRACT NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ARE:

2 PLACE DECIMALS $\pm$.05

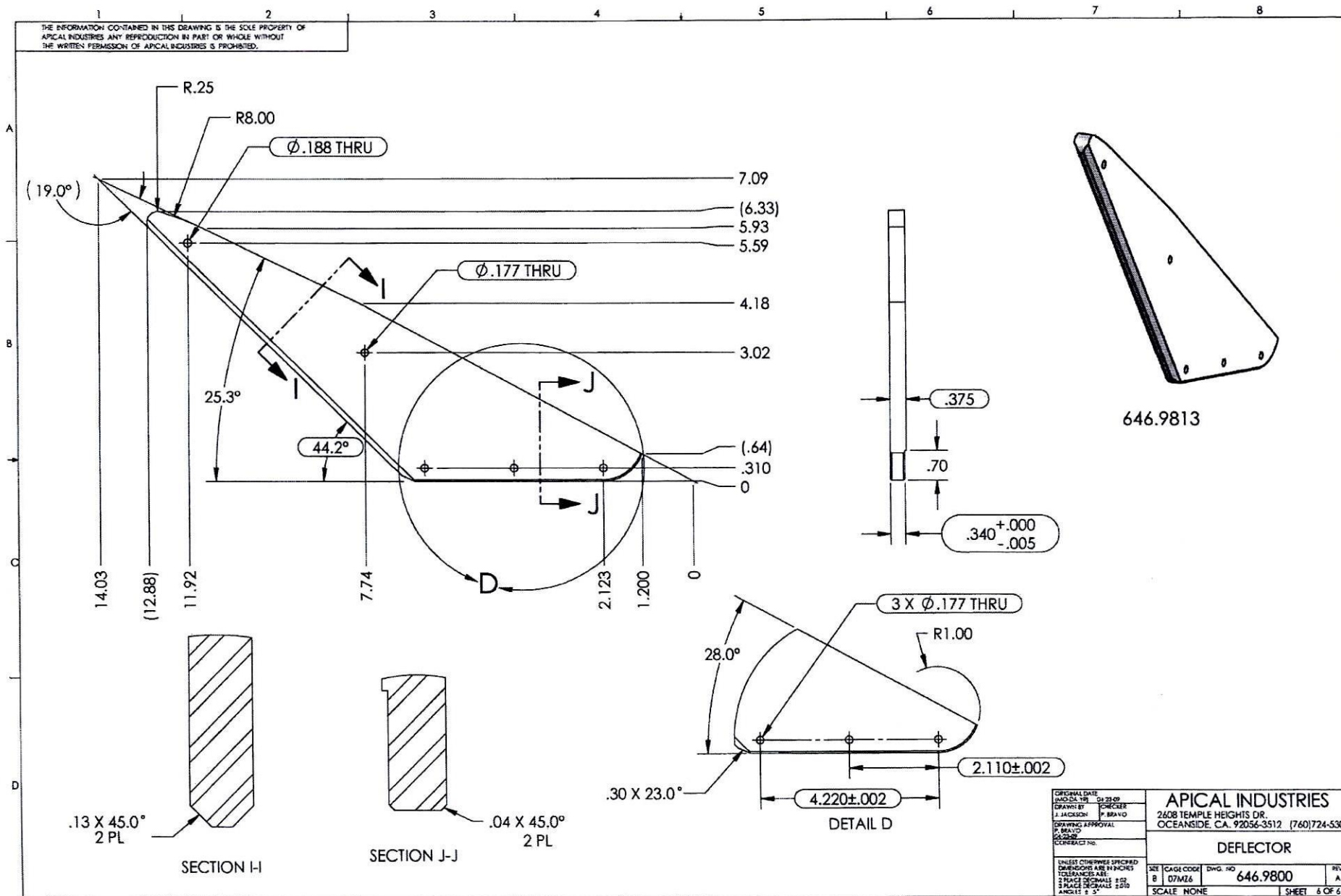
3 PLACE DECIMALS $\pm$.010

ANGLES $\pm$ 5°

SCALE NONE

SHEET 5 OF 6

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ORIGINAL DATE: 04/28/09		APICAL INDUSTRIES	
DRAWN BY: J. JACKSON	CHECKED: P. BRAVO	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL: P. BRAVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		DEFLECTOR	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 1. PLACE DECIMALS ±.02, 2. PLACE DECIMALS ±.01, 3. PLACE DECIMALS ±.005. ANGLE ±.5°		SEE: B	REV: A
CAGE CODE: 07M16		DWG. NO: 646.9800	
SCALE: NONE		SHEET 6 OF 6	



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038218

Items

Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
4	166867	649.4820	-	MIL-PRF-23377 TYPE 1 CLASS N Shim ISSUE P/O: FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF- 23377 TYPE I CLASS N		Firmed	11/17/17	20 pcs	0 pcs	20 pcs	\$8.60/pcs	\$172.00
5	167011	D4970-5	-	Doubler Issue P/O to ATG : FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE 1 CLASS N		Firmed	11/17/17	2 pcs	0 pcs	2 pcs	\$8.60/pcs	\$17.20
6	165143	646.9811	-	Upper Deflector Issue P/O to ATG : AS PER MPP-172 SECTION 2.1, HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2 AS PER MPP-172 SECTION 4.2, PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N		Firmed	11/17/17	18 pcs	0 pcs	18 pcs	\$34.45/pcs	\$620.10
7	166392	RBW6405G02131-3G-3	-	-Issue P/O to ATG: ANODIZE COLOR CLEAR, PER IAW MIL- A-8625F TYPE 2 CLASS 1 WATER SEAL		Firmed	11/17/17	1 pcs	0 pcs	1 pcs	\$26.85/pcs	\$26.85
8	165851	RBEM632V5000102-1	-	-Issue P/O to ATG: ANODIZE COLOR CLEAR, PER IAW MIL- A-8625F TYPE 2 CLASS 1 WATER SEAL		Firmed	11/17/17	1 pcs	0 pcs	1 pcs	\$26.85/pcs	\$26.85
9	166197	RBEM632V3009123-11	-	-Issue P/O to ATG: ANODIZE COLOR CLEAR, PER IAW MIL- A-8625F TYPE 2 CLASS 1 WATER SEAL		Firmed	11/17/17	1 pcs	0 pcs	1 pcs	\$26.85/pcs	\$26.85



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (513) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914135

Date: 17-Nov-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
18 ea	Part: 646.9811 Upper deflector Job: 21873	Rev: A PO: PO038218 Line: 6	SPR-11-21
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: 17/11/2017 Certified Signature: Receiver Signature: _____ A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
Made in Canada.			